

they came nearer and nearer together, and at length became co-incident; and afterwards when I went still further off, they parted again in a contrary order, the violet by a greater Refraction being carried beyond the red.

Exper. 8. In Summer when the Sun's Light uses to be strongest, I placed a Prism at the hole of the Window-shut, as in the third Experiment, yet so that its Axis might be Parallel to the Axis of the World, and at the opposite Wall in the Sun's refracted Light, I placed an open Book. Then going Six Feet and two Inches from the Book, I placed there the abovementioned Lens, by which the Light reflected from the Book might be made to converge and meet again at the distance of six Feet and two Inches behind the Lens, and there paint the Species of the Book upon a sheet of white Paper much after the manner of the second Experiment. The Book and Lens being made fast, I noted the place where the Paper was, when the Letters of the Book, illuminated by the fullest red Light of the Solar Image falling upon it, did cast their Species on that Paper most distinctly; And then I stay'd till by the Motion of the Sun and consequent Motion of his Image on the Book, all the Colours from that red to the middle of the blew pass'd over those Letters; and when those Letters were illuminated by that blew, I noted again the place of the Paper when they cast their Species most distinctly upon it: And I found that this last place of the Paper was nearer to the Lens than its former place by about two Inches and an half, or two and three quarters. So much sooner therefore did the Light in the violet end of the Image by a greater Refraction converge and meet, than the Light in the red end. But in trying this the Chamber was as dark as I could make it. For if these Colours be diluted and weakened by the mixture of any adventitious Light, the distance
between

between the places of the Paper will not be so great. This distance in the second Experiment where the Colours of natural Bodies were made use of, was but an Inch and a half, by reason of the imperfection of those Colours. Here in the Colours of the Prism, which are manifestly more full, intense, and lively than those of natural Bodies, the distance is two Inches and three quarters. And were the Colours still more full, I question not but that the distance would be considerably greater. For the coloured Light of the Prism, by the interfering of the Circles described in the 11th Figure of the fifth Experiment, and also by the Light of the very bright Clouds next the Sun's Body intermixing with these Colours, and by the Light scattered by the inequalities in the polish of the Prism, was so very much compounded, that the Species which those faint and dark Colours, the Indigo and Violet, cast upon the Paper were not distinct enough to be well observed.

Exper. 9. A Prism, whose two Angles at its Base were equal to one another and half right ones, and the third a right one, I placed in a beam of the Sun's Light let into a dark Chamber through a hole in the Window-shut as in the third Experiment. And turning the Prism slowly about its Axis until all the Light which went through one of its Angles and was refracted by it began to be reflected by its Base, at which till then it went out of the Glass, I observed that those Rays which had suffered the greatest Refraction were sooner reflected than the rest. I conceived therefore that those Rays of the reflected Light, which were most Refrangible, did first of all by a total Reflexion become more copious in that Light than the rest, and that afterwards the rest also, by a total Reflexion, became as copious as these. To try this, I made the reflected Light pass through another Prism, and being refracted